

# 2SB859

Silicon PNP Triple Diffused

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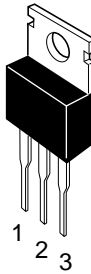
ADE-208-860 (Z)  
1st. Edition  
Sep. 2000

## Application

Low frequency power amplifier complementary pair with 2SD1135

## Outline

TO-220AB



1. Base
2. Collector (Flange)
3. Emitter

## Absolute Maximum Ratings (T<sub>a</sub> = 25°C)

Item	Symbol	Rating	Unit
Collector to base voltage	V <sub>CBO</sub>	-100	V
Collector to emitter voltage	V <sub>CEO</sub>	-80	V
Emitter to base voltage	V <sub>EBO</sub>	-5	V
Collector current	I <sub>C</sub>	-4	A
Collector peak current	I <sub>C(peak)</sub>	-8	A
Collector power dissipation	P <sub>C</sub> *1	40	W
Junction temperature	T <sub>j</sub>	150	°C
Storage temperature	T <sub>stg</sub>	-45 to +150	°C

Note: 1. Value at T<sub>c</sub> = 25°C

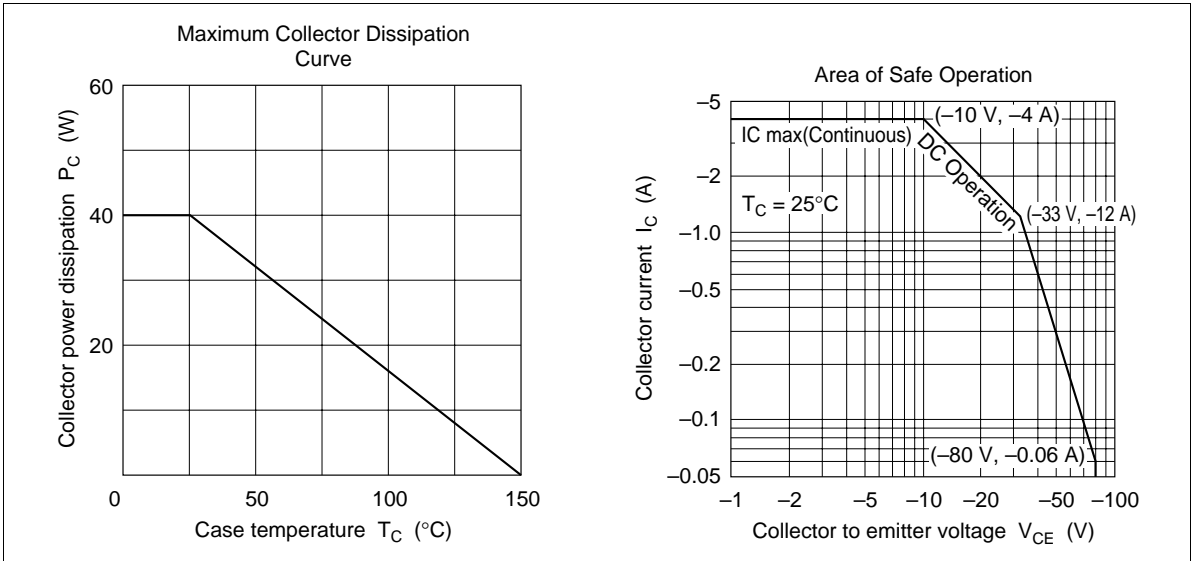
## Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	-80	—	—	V	$I_C = -50 \text{ mA}$ , $R_{BE} = \infty$
Emitter to base breakdown voltage	$V_{(BR)EBO}$	-5	—	—	V	$I_E = -10 \text{ }\mu\text{A}$ , $I_C = 0$
Collector cutoff current	$I_{CBO}$	—	—	-0.1	mA	$V_{CB} = -80 \text{ V}$ , $I_E = 0$
DC current transfer ratio	$h_{FE1}^{*1}$	60	—	200		$V_{CE} = -5 \text{ V}$ , $I_C = -1 \text{ A}^{*2}$
	$h_{FE2}$	35	—	—		$V_{CE} = -5 \text{ V}$ , $I_C = -0.1 \text{ A}^{*2}$
Base to emitter voltage	$V_{BE}$	—	—	-1.5	V	$V_{CE} = -5 \text{ V}$ , $I_C = -1 \text{ A}^{*2}$
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	—	-2	V	$I_C = -2 \text{ A}$ , $I_B = -0.2 \text{ A}^{*2}$
Gain bandwidth product	$f_T$	—	20	—	MHz	$V_{CE} = -5 \text{ V}$ , $I_C = -0.5 \text{ A}^{*2}$
Collector output capacitance	$C_{ob}$	—	75	—	pF	$V_{CB} = -20 \text{ V}$ , $I_E = 0$ , $f = 1 \text{ MHz}$

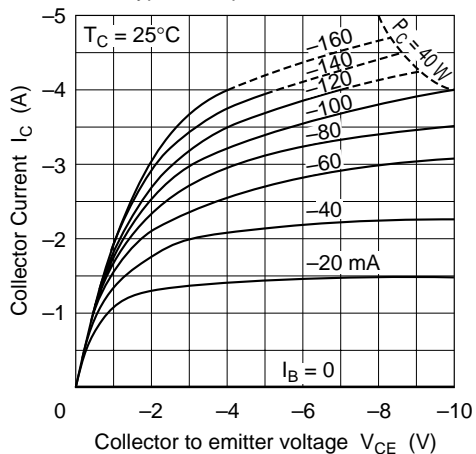
Notes: 1. The 2SB859 is grouped by  $h_{FE1}$  as follows.

2. Pulse test

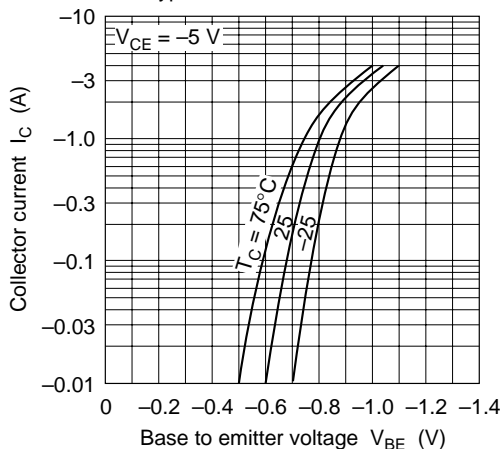
B	C
60 to 120	100 to 200



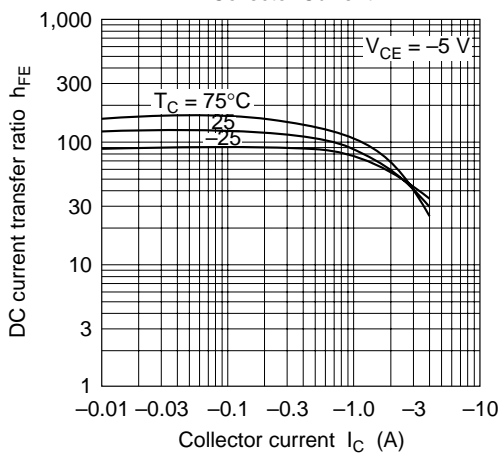
Typical Output Characteristics



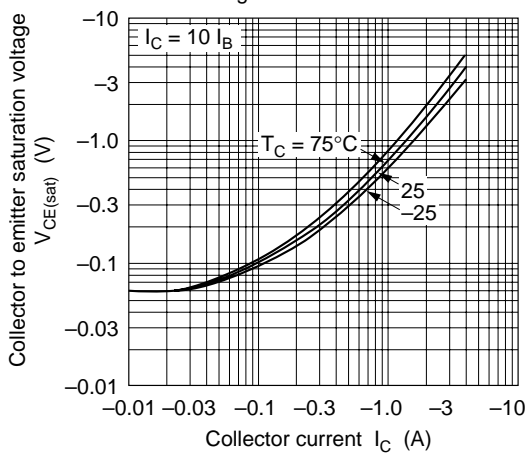
Typical Transfer Characteristics



DC Current Transfer Ratio vs. Collector Current

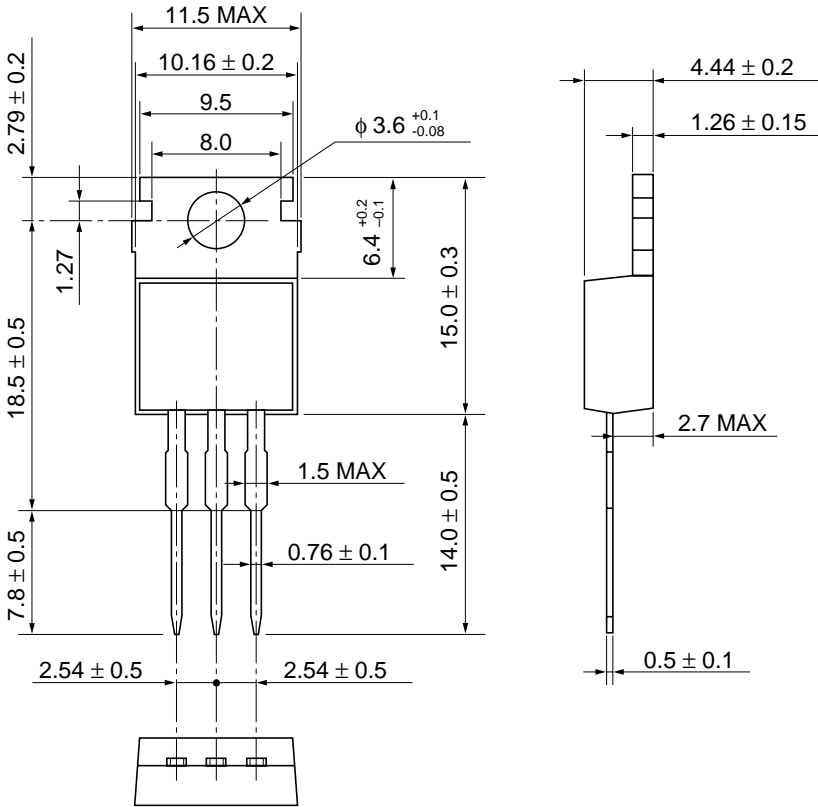


Collector to Emitter Saturation Voltage vs. Collector Current



Package Dimensions

Unit: mm



Hitachi Code	TO-220AB
JEDEC	Conforms
EIAJ	Conforms
Mass (reference value)	1.8 g

## Cautions

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